Abstract

A Pipelined-based Maximal-sized Matching (PMM) scheduling approach for input-buffered switches relaxes the timing constraint for arbitration with a maximal matching scheme. In the PMM approach, arbitration may operate in a pipelined manner. Each subscheduler is allowed to take more than one time slot for its matching. Every time slot, one of them provides the matching result. The subscheduler can adopt a pre-existing efficient maximal matching algorithm such as iSLIP and DRRM. PMM maximizes the efficiency of the adopted arbitration scheme by allowing sufficient time for a number of iterations. PMM preserves 100% throughput under uniform traffic and fairness for best-effort traffic.